

REMARKS§ 112 Rejections

Claims 9-12 and 14-15 stand rejected under § 112 as containing subject matter not sufficiently described in the original filing. Particularly, Examiner took exception with the notion of a first and second core, around which a web is wrapped. This concept is at least explained on page 3 of the specification, starting at about line 13:

When it is convenient for the user of the method to perform the identification of anomalous regions on the web at a first time and place and perform the localization and marking of actual defects at a second time and place, it will usually also be convenient to perform a winding of the web onto a roll between the placing step and the applying step. The wound roll can then be shipped to a convenient place along with the stored information about its surface anomalies, where it can there wait for a decision to be made about application of the roll to a specific end-use. Depending on the exact end-use, it may be convenient to place the locating marks on or adjacent to the anomalies whose position they identify, or it may be convenient to place the locating marks such that they are spaced in a predetermined way from the anomalies whose position they identify.

The term "core" is used on p. 7, referring to "core 56" in Fig. 1. Fig. 1 shows a core is that which a web may be wound around.

Claim 29 – 30 stand rejected under § 112 as being indefinite because they have improper dependency. This has been corrected, and examiner's treatment of the claims (they should both depend from claim 28) is correct.

Withdrawal of the § 112 rejections is requested.

§ 102 and § 103 Rejections – Introductory Comments

Applicants' claims stand rejected under some combination of Ho et. al. (US Pat. No. 6,934,028), Korngold (US Pat. No. 6,814,514), or Dante (US Pat. No. 5,365,596). There are significant features required by Applicants' claims, particularly as amended, that are not taught or suggested by any combination of these references.

DISTINCT WEB HANDLING OPERATIONS

Each of Applicant's claims includes the notion of marking defects on a web during a web based operation that is separate from the discovery (and possibly analysis) of anomalies or defects on the web. For example, a first web process may include the step of identifying anomalies; then the web may be shipped or stored somewhere; and then once the end use of the web is determined (for e.g., films for cell phone, versus films for plasma television sets), a second web process uses data derived in the first web process to actually identify and mark the defects.

This concept of a first web process (to discover defects) as temporally distinct from a second web process (that marks defects) is elicited in the claims in different ways, but it is present in some manner in every claim. For example, independent claim 1 distinguishes the two processes via a "winding step;" independent claim 9 includes first and second "webhandling apparatus;" independent claim 22 and 28 include an explicit step involving "unwinding the roll." The remaining independent claim (25) is somewhat different, in that its focus concerns the activities of the "second web process" that would receive information about the web, then mark it; nonetheless, it still includes the "distinct processes" concept.

None of the references of record teach or suggest this concept of a first process that inspects a web, then a second process that marks defects on the web, and for this reason at least, the claims should be allowed. In the latest Office Action, this concept was not shown to be within the art of record. For example, with regard to claim 1, the portion of the claim eliciting this concept is cross-cited to Ho col. 13, lines 34-49. This portion of Ho, however, simply teaches that once a web is scanned, it may be re-inspected to verify defects. This is not the same as what applicant is claiming.

MARKING BASED ON CONTEMPLATED END USE

Also, present in many of Applicant's claims is some notion of anomalies being defects based on the intended end-use of the web. For example, a first process inspects a web for anomalies, generating data describing the anomalies. Say the web can be used in either cell phone screens or plasma television screens (both with different tolerances for what constitutes a defect). It is later determined that the web will be used in cell phone screens. Thus, anomalies with respect to cell phone screen application are considered defects and marked, and anomalies that would be defects if present in a plasma television screen, but are not noticeable in a cell phone screen, are not marked.

The idea elicited by Applicant's disclosure is that the decision of what the end use of the web may be made after the initial inspection of the web: "The wound roll can then be shipped to a convenient place along with the stored information about its surface anomalies, where it can there wait for a decision to be made about application of the roll to a specific end-use." (p. 3 @ 20 in Applicant's specification). There is no teaching or suggestion in any of the references of record that the decision of what constitutes a defect is made after the inspection phase, based on the end-use of the web, then that defect marked.

In the latest Office Action, the portion of claim 2 eliciting this inspection versus marking concept was cross-cited to Ho col. 7 lines 46-59 and column 8, lines 12-60. Taking these citations in order, the first one concerns "anomalies on the material web that are in fact not flaws, but just part of the material. These are traditionally known as 'Go defects', and can be excluded from the final reports provided as part of the roll certification. Such selective reporting can be controlled by the engineer as part of the product setup." (emphasis added). "Product setup" means that the configuration is done in advance or commensurate with production of the roll itself (which is the "product" being referred to in Ho), because the configuration is used for the roll certification that is provided to a customer along with the roll. In other words, there is no later determination of what constitutes a mere anomaly versus what constitutes a defect; Ho sets up the product recipe with its corresponding sensitivity for defects, and that is all Ho does. Ho has no teaching or suggestion of an identified anomalous area of a web that is later determined to be a defect. Ho is thus distinguished from the concept Applicant is at times claiming – where

what constitutes a defect is determined after web process(es) associated with the inspection step. Also, note that the “product” referred to in Ho is not the end use product (like a cell phone); as used in Ho, product refers to the roll of material itself.¹

The second Ho cite concerning said to elicit the inspection versus marking concept (Ho col. 8 @ 12-60) is simply describing how defects and flaws are recognized and recorded in a database. Flaws in Ho are apparently a type of defect that cross line scans and must be built up to arrive at a full flaw (col. 8 @ 53). Both flaws and defects are defined commensurate with inspection in Ho; there is no teaching or suggestion that the flaws and defects are based on the end use of the web itself.

To further elicit the inspection versus marking concept within the claims, applicant has amended for example claim 2 to include “receiving input defining the constituents of an anomaly that is a defect with respect to the contemplated use of the web.” Further, applicant has added claim 31 to further elicit that time-order of the steps in claim 2. Claim 10 has been similarly amended.

FIDUCIAL MARKS

All of Applicant's claims, as amended, include limitations concerning the nature of fiducial marks used on the web. Particularly, Applicant's claims require the fiducial marks to uniquely identify a position on the web. One embodiment of such a fiducial mark would be, for example, a series ink-printed barcodes along the edge of a web, representing an alpha-numeric sequence that is unique to the web. The references relied upon in the current Office Action teach only generic fiducial marks that are not taught or suggested to be unique (ink dots (see e.g. Dante col. 5 starting @ 63) or hole punches (see e.g. Ho Fig. 9B and col. 13 @ 7-16; Korngold col. 3 @ 48)). Further, Ho continuously uses the term “fiduciary” rather than fiducial, so it's not clear Ho

¹ The specification of Ho, for example, has many references to the “product” that make it clear the “product” is the web itself, not the end-use product. For example: “there are no simple ways to certify or verify the actual quality of the web product.” (col. 1 @ 25). “These web inspection systems are capable of high speed, high-resolution detection and classification of surface imperfections in continuously manufactured products at rates in excess of 500 inches per second.” (col. 1 @ 40). “These defect-critical products are manufactured and sold with little more than promises and good intentions of quality, certification of fitness for use, and compliance with purchase orders.” (col. 2 @ 37). “The “Product Inspection Certificate” further assures that the correct system setup parameters for the particular web product being inspected are being used.” (col. 2 @ 61).

even grasps the concept of a fiducial mark, whether unique or not. A “fiduciary” is a person that holds a fiduciary relation or acts in a fiduciary capacity often involving a confidence or trust.

FIRST AND SECOND ALGORITHMS

Several of Applicants claims include a first algorithm that provides data describing anomalies, and a second algorithm that analyzes the data describing anomalies to determine defects. For example, claims 3, 11, and 25 (as well as its dependents) include two algorithms. Concerning claim 25, Examiner says a second algorithm may be found in Ho at col. 13 @ 18-33 and 61, and col. 14 @ 3. Col. 13 @ 18-33 discusses only re-inspection, which is implicitly with the same algorithm because the goal is to “again” detect the defects. There is no teaching or suggestion of the use of a subsequent algorithm, let alone such a subsequent algorithm receiving input generated from the first algorithm that identified anomalies.

Line 61 says “If the Production data is deemed consistent at 93, the process proceeds to 94 to Verify the Product Roll.” The paragraph continues, saying that the results of the first inspection are compared to the second inspection. This actually implies the absence of a second algorithm that receives anomaly data of the first – if anything the data from the re-inspection is processed using the same algorithm as the first inspection.

Col. 14 @ 18-33 does not seem to describe any type of algorithm processing.

To further distinguish from Ho on these grounds, where appropriate Applicant has further clarified that a second or subsequent algorithm is distinct from a first or initial algorithm. For example, in claim 3, in regard to a subsequent algorithm, applicant has added: “wherein the subsequent algorithm is not the same as the initial algorithm.” Similar amendments have been made to claims 11 and 25.

Applicant also notes that Ho is generally relied upon by Examiner for teaching the concept of marking defects (see e.g. last Office Action, p. 6 1st full paragraph; middle of p. 8, etc.). Applicant has found in Ho no teaching or suggestion of marking defects. Examiner cites Ho col. 13 @ 34-49 or col. 5 @ 46-55, but neither of these cites teaches actually marking a defect.

In summary, each of Applicant's pending claims, as amended, has at least two, and in some cases three or four features that distinguish over the references of record. For at least these reasons, the invention claimed by Applicant is novel and un-obvious. Prompt allowance of pending claims is respectfully requested.

Applicant would like to thank Examiner Rush and his supervisor Examiner Ahmed for an in-person interview at the USPTO on August 17, 2007. The undersigned and Steve Floeder were present on behalf of 3M. The parties discussed the prior art of record as compared with the claims, and possible approaches to claim amendments.

Respectfully submitted,

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By: Steven A. Bern
Steven A. Bern, Reg. No.: 57,095
Telephone No.: 651-733-2255

Office of Intellectual Property Counsel
3M Innovative Properties Company
Facsimile No.: 651-736-3833